

## NP905 Installation Guide

### Ceiling Mounted and Desktop

Rev 1.1

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#### Product Description

Type:	3 panel LCD projector, 0.63" p-Si TFT w/MLA	Brightness:	2000 ANSI Lumens
Resolution:	1024 x 768	Dimensions:	12.2"(W) x 4.9"(H) x 11.4"(D)
Fan Noise:	35 dB / 29dB @ 1 meter	Weight:	8.16 lbs
Power Consumption:	310W (max)	BTU's:	1055 BTU/hour

#### Lens Specifications

Throw Ratio:	1.5 – 1.8:1 (for 100" diagonal)	Focal Length:	18.89mm – 22.67mm
Offset Angle:	8.4° - 10.0° (for 100" diagonal)	F/#:	1.70 - 2.07
Screen Sizes:	21" - 300" diagonal (4:3)	Manual Focus/Manual Zoom	

#### Notes

- For screen sizes not indicated on the projection tables, use the formulas below.  
If the figures on the tables do not match the results of formulas, use the figures in the table.
- All calculations are based on 4:3 aspect ratio.
- Distances are in inches, for millimeters multiply by 25.4.
- Distances may vary  $\pm 5\%$ .

#### Formulas

The Projection Formulas use the image width for calculation. For proper projection placement, determine the image width for the desired screen size. Use the Screen Formulas below to calculate all screen dimensions. Plug in the width for "W" in the Projection Formulas.

Refer to the diagrams and charts for popular screen sizes on page 2:

##### Definitions:

W = Image Width  
H = Image Height (size)  
B = Vertical distance between lens center and screen center  
C = Throw distance  
D = Vertical distance between lens center and screen top  
(screen bottom for desktop application)

##### 4:3 Screen Formulas:

$W = H \times 4/3$   
 $H = W \times 3/4$   
Screen Diagonal =  $W \times 5/4$

##### Projection Formulas:

$B = 0.258W$   
 $C(\text{wide}) = 1.4805W - 1.823$   
 $C(\text{tele}) = 1.7765W - 1.820$   
 $D = 0.118W$   
 $\alpha(\text{wide}) = \tan^{-1} (B/C(\text{wide}))$   
 $\alpha(\text{tele}) = \tan^{-1} (B/C(\text{tele}))$

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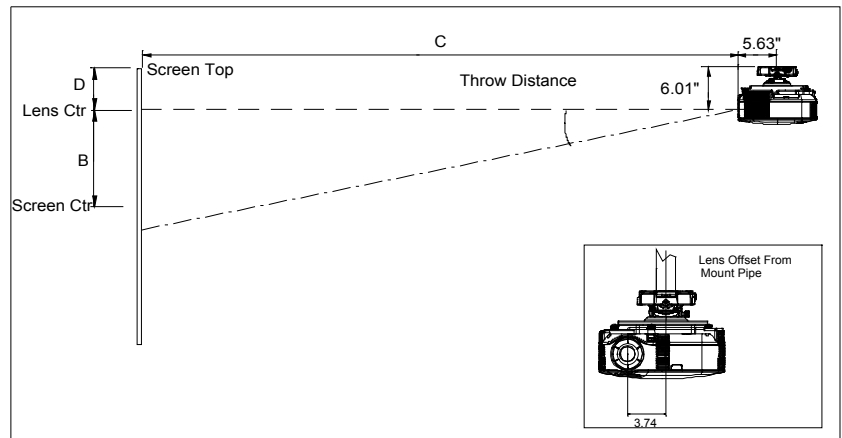
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### Diagrams and Distance Charts

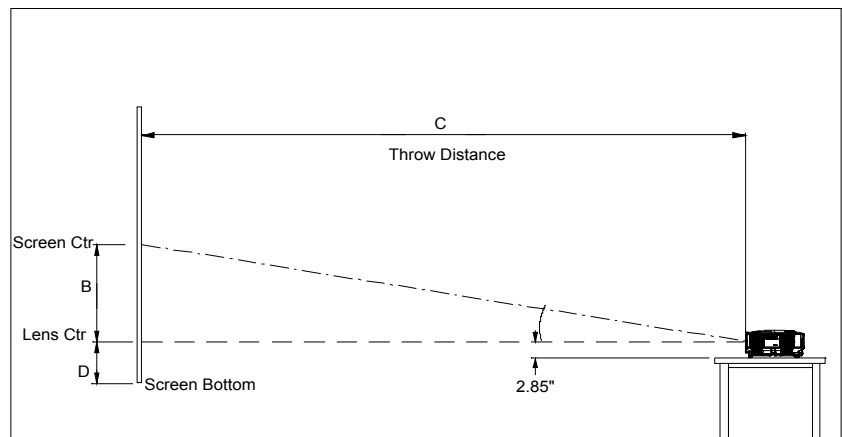
The following shows the proper relative positions of the projector and screen. Refer to the table to determine the position of installation.

Distances are in inches. For millimeters multiply by 25.4.

#### Ceiling Mounted



#### Desktop



### Distance Chart for popular 4:3 screens

Screen Size (4:3)			B	C		D	α		
Diagonal	Width(W)	Height (H)		w ide - tele			w ide - tele		
inches	inches	inches	inches	inches		inches	degrees		
30	24	18	6	34	- 41	-3	10.2	-	8.5
60	48	36	12	69	- 83	-6	10.1	-	8.4
67	53.6	40.2	14	78	- 93	-6	10.1	-	8.4
72	57.6	43.2	15	83	- 101	-7	10.0	-	8.4
84	67.2	50.4	17	98	- 118	-8	10.0	-	8.4
90	72	54	19	105	- 126	-8	10.0	-	8.4
100	80	60	21	117	- 140	-9	10.0	-	8.4
120	96	72	25	140	- 169	-11	10.0	-	8.3
150	120	90	31	176	- 211	-14	10.0	-	8.3
180	144	108	37	211	- 254	-17	10.0	-	8.3
210	168	126	43	247	- 297	-20	10.0	-	8.3
240	192	144	50	282	- 339	-23	9.9	-	8.3
270	216	162	56	318	- 382	-25	9.9	-	8.3
300	240	180	62	353	- 425	-28	9.9	-	8.3

**Note:** For screen sizes not indicated on the projection tables, use the formulas on page 1.

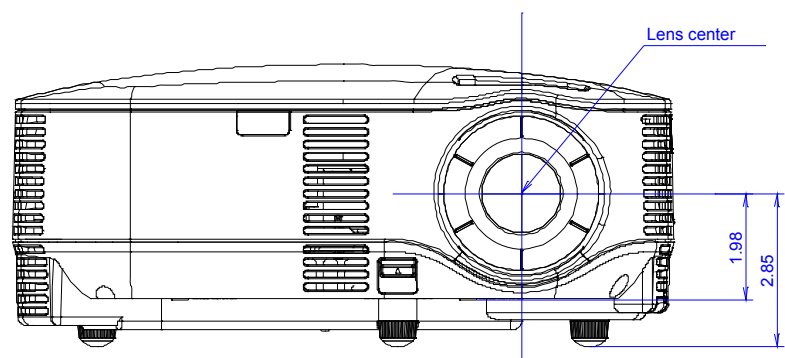
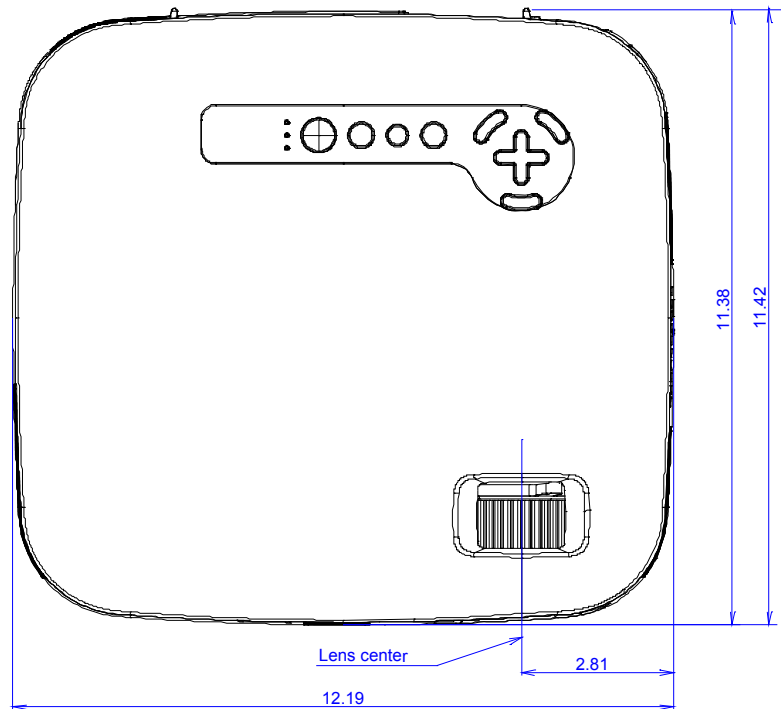
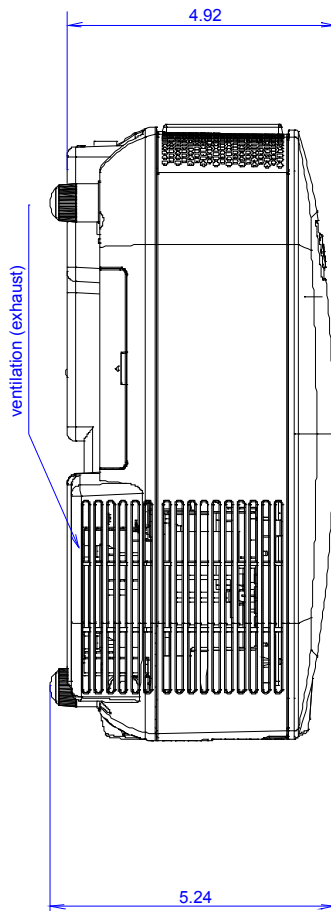
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### Cabinet Dimensions

The following drawings show the cabinet dimensions.  
Dimensions are in inches. For millimeters multiply by 25.4.



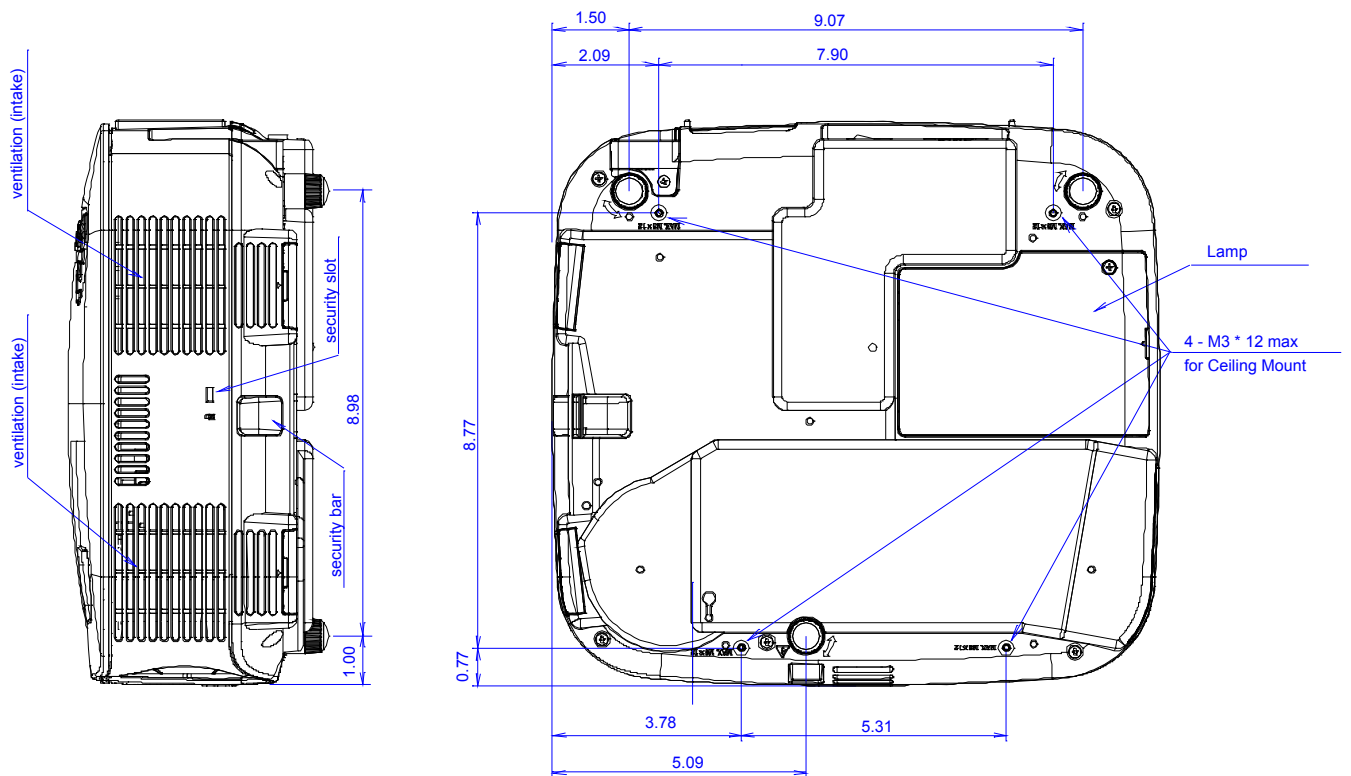
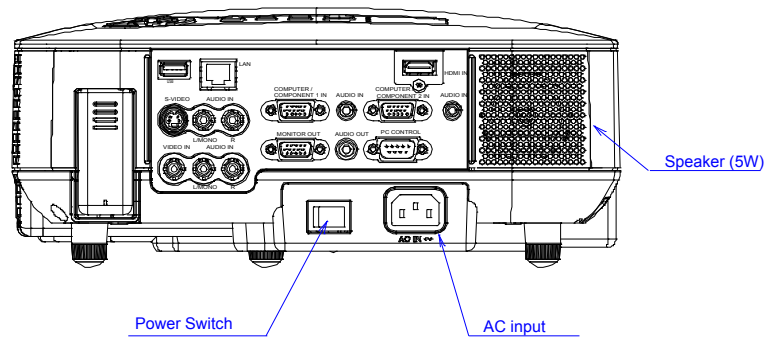
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### Cabinet Dimensions (continued)

The following drawings show the cabinet dimensions.  
Dimensions are in inches. For millimeters multiply by 25.4.



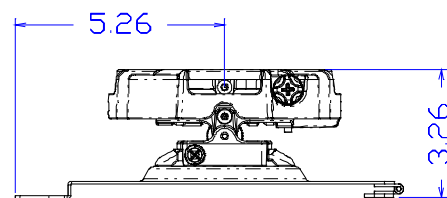
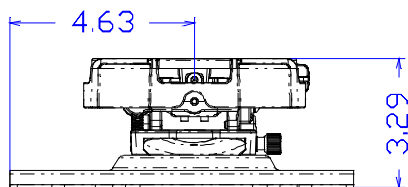
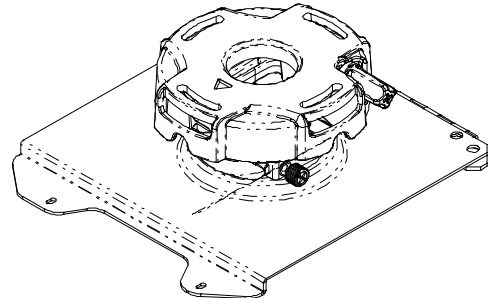
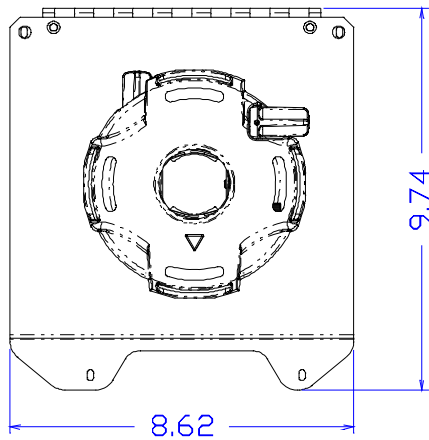
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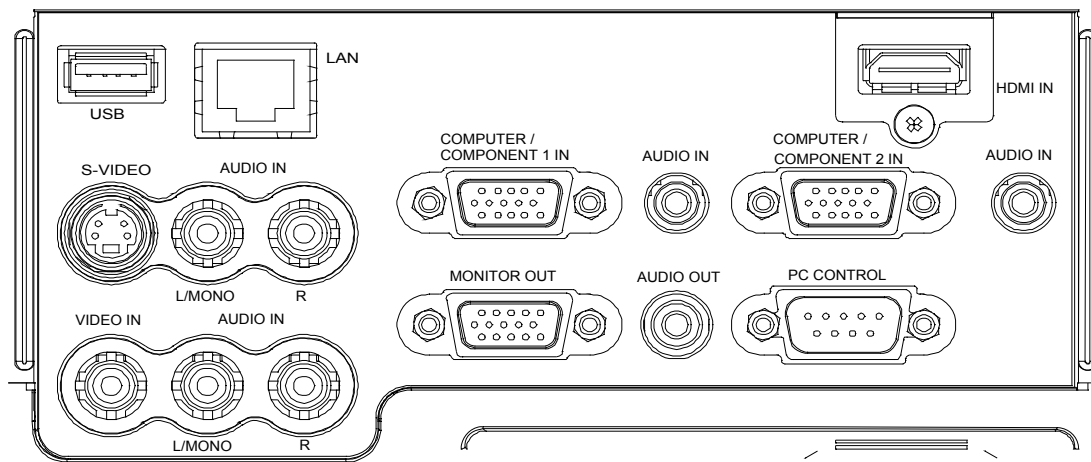
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#### Optional Ceiling Mount Dimensions (Model #: NP900CM)

The following drawings show the ceiling mount dimensions.  
Dimensions are in inches. For millimeters multiply by 25.4.



#### Input Panel



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### PC Control Codes

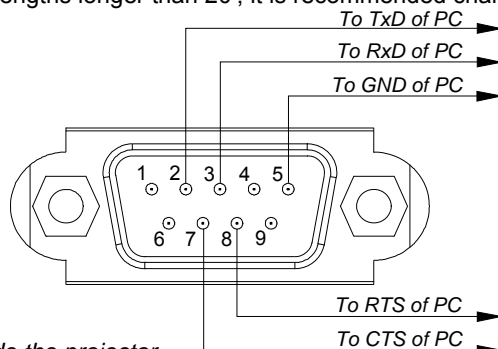
Function	Code Data										
POWER ON	02H	00H	00H	00H	00H	02H					
POWER OFF	02H	01H	00H	00H	00H	03H					
INPUT SELECT COMPUTER 1	02H	03H	00H	00H	02H	01H	01H	09H			
INPUT SELECT COMPUTER 2	02H	03H	00H	00H	02H	01H	02H	0AH			
INPUT SELECT HDMI	02H	03H	00H	00H	02H	01H	1AH	22H			
INPUT SELECT VIDEO	02H	03H	00H	00H	02H	01H	06H	0EH			
INPUT SELECT S-VIDEO	02H	03H	00H	00H	02H	01H	0BH	13H			
INPUT SELECT VIEWER	02H	03H	00H	00H	02H	01H	1FH	27H			
PICTURE MUTE ON	02H	10H	00H	00H	00H	12H					
PICTURE MUTE OFF	02H	11H	00H	00H	00H	13H					
SOUND MUTE ON	02H	12H	00H	00H	00H	14H					
SOUND MUTE OFF	02H	13H	00H	00H	00H	15H					
ON SCREEN MUTE ON	02H	14H	00H	00H	00H	16H					
ON SCREEN MUTE OFF	02H	15H	00H	00H	00H	17H					
ASPECT RATIO (4:3 Screen)											
4:3	03H	10H	00H	00H	05H	18H	00H	00H	00H	00H	30H
LETTERBOX	03H	10H	00H	00H	05H	18H	00H	00H	01H	00H	31H
WIDESCREEN	03H	10H	00H	00H	05H	18H	00H	00H	02H	00H	32H
ZOOM	03H	10H	00H	00H	05H	18H	00H	00H	03H	00H	33H
ASPECT RATIO (16:9 Screen)											
4:3 WINDOW	03H	10H	00H	00H	05H	18H	00H	00H	00H	00H	30H
LETTERBOX	03H	10H	00H	00H	05H	18H	00H	00H	01H	00H	31H
WIDESCREEN	03H	10H	00H	00H	05H	18H	00H	00H	02H	00H	32H
4:3 FILL	03H	10H	00H	00H	05H	18H	00H	00H	03H	00H	33H
ASPECT RATIO (RGB)											
4:3	03H	10H	00H	00H	05H	18H	00H	00H	00H	00H	30H
16:9	03H	10H	00H	00H	05H	18H	00H	00H	02H	00H	32H
5:4	03H	10H	00H	00H	05H	18H	00H	00H	0BH	00H	3BH
16:9	03H	10H	00H	00H	05H	18H	00H	00H	0CH	00H	3CH
15:9	03H	10H	00H	00H	05H	18H	00H	00H	0DH	00H	3DH
AUTO ADJUST	02H	0FH	00H	00H	02H	05H	00H	18H			

**Note:** Contact your NEC rep for codes not listed.

### Cable Connection

#### Communication Protocol:

Baud Rate: 38400 bps (for cable lengths longer than 20', it is recommended changing to 9600 bps in setup menu)  
 Data Length: 8 bits  
 Parity: No Parity  
 Stop Bit: One Bit  
 X on/off: None  
 Communications: Full duplex



**NOTE 1 :** Pins 2, 3, 5, and 6 are used inside the projector.

**NOTE 2:** For long cable runs it is recommended to set communication speed within the projector to 9600 bps.